

PACCAR

Remote User Testing

University of Washington · Industrial & Systems Engineering

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Introduction

Problem

With the onset of COVID-19, user testing for PACCAR trucks has significantly decreased. In order to restart truck testing during this time, the user testing process needs to be improved to meet safety guidelines and practice social distancing. User testing must be conducted safely, effectively, and remotely.

Goal

To safely and effectively monitor and communicate drivers remotely

Deliverables

A plan for completely remote user testing that is flexible, has WiFi connection at all times, and is not distracting to the driver

Why Remote User Testing?



50% labor reduction



25% less time for data collection



75% increase in efficiency

Constraints/Requirements

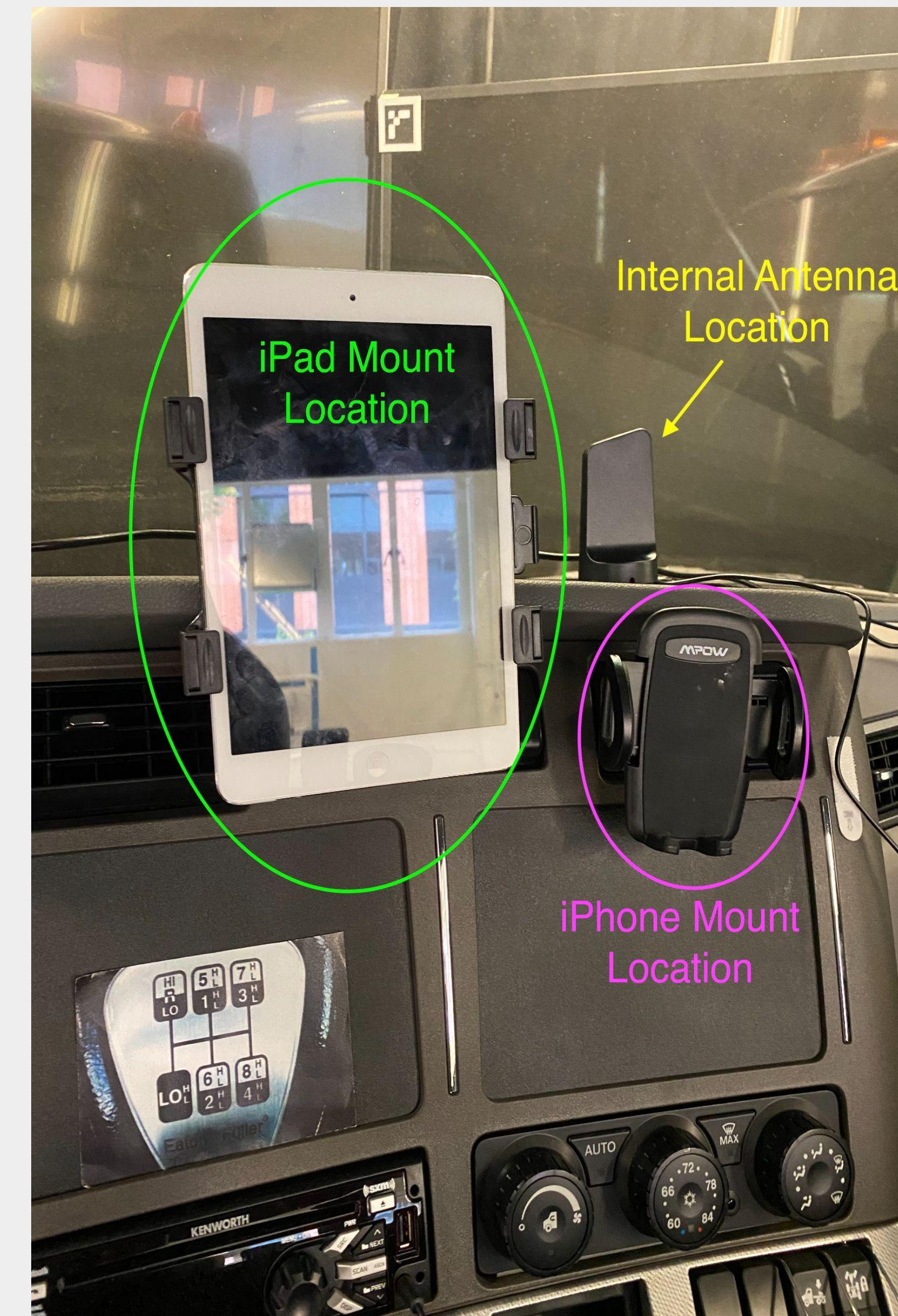
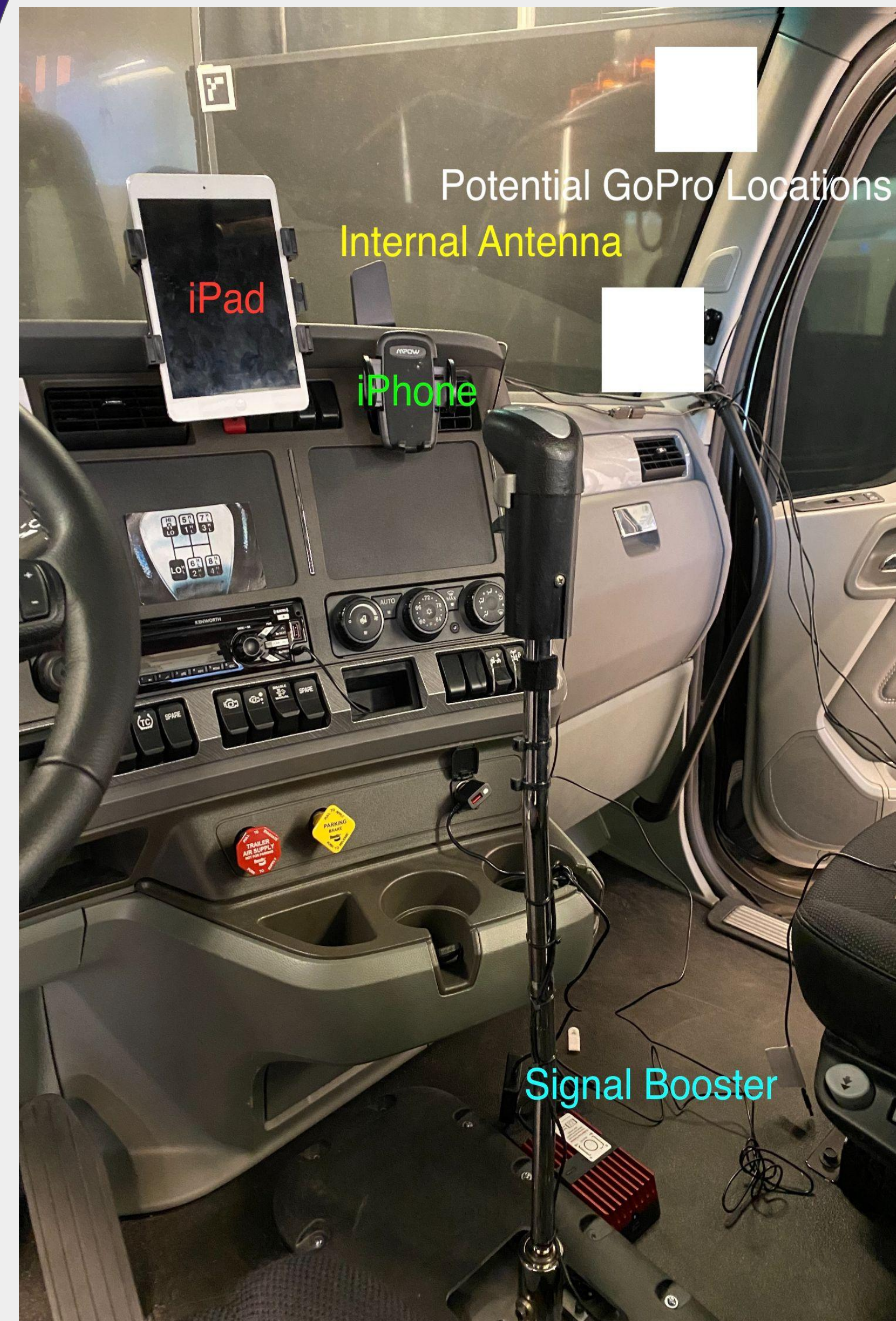
Constraints:

- COVID-19 Restrictions
- Limited budget
- Two quarter timeline
- Compliance with Washington State's Cell-Phone Use laws
- Testing will be done in rural areas where cell service is not always available

Requirements:

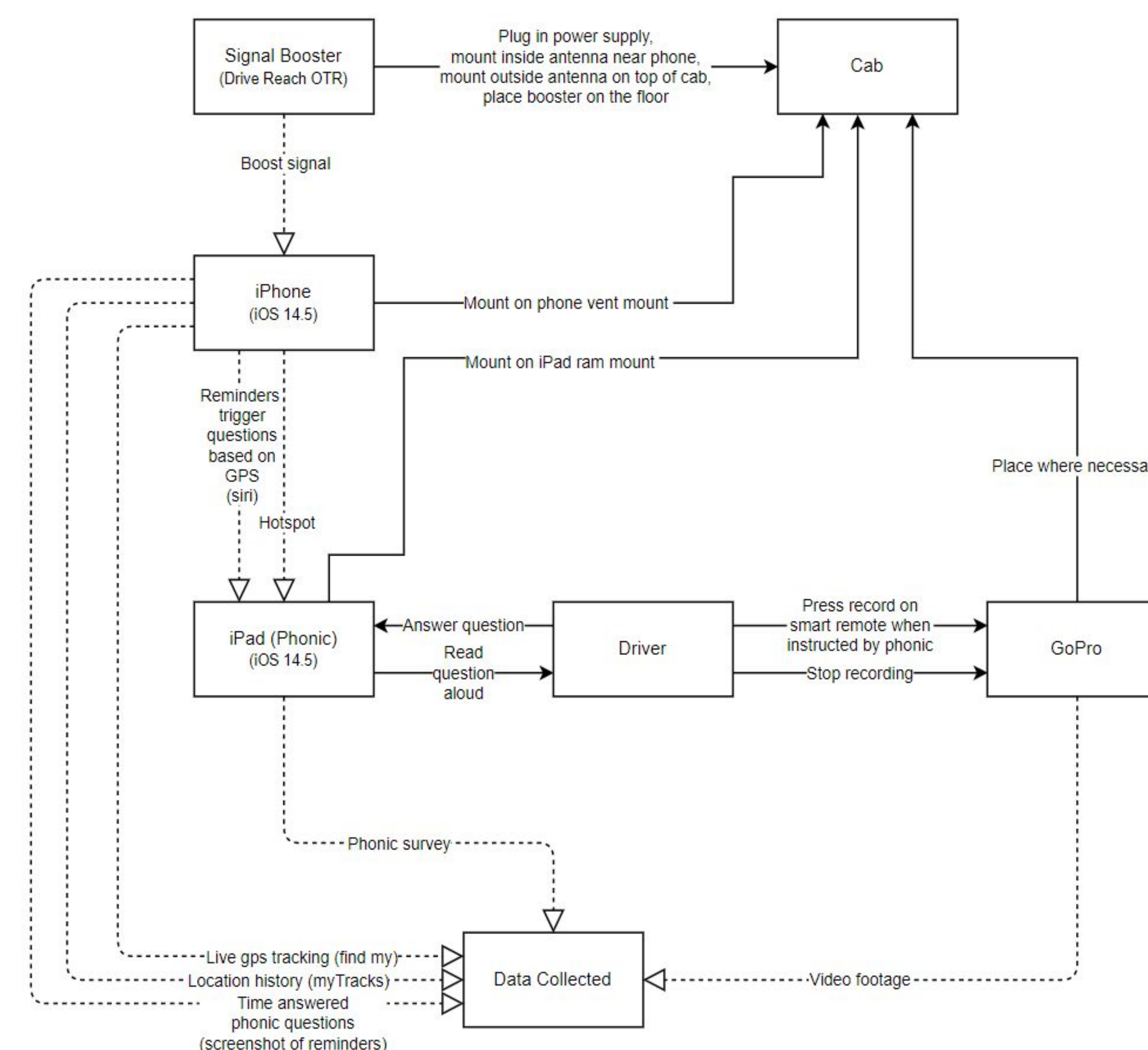
- Able to go to different truck models
- Able to have service at all times
- Must not be a distraction
- Use GPS to deliver survey questions
- Meet company security requirements

System Setup

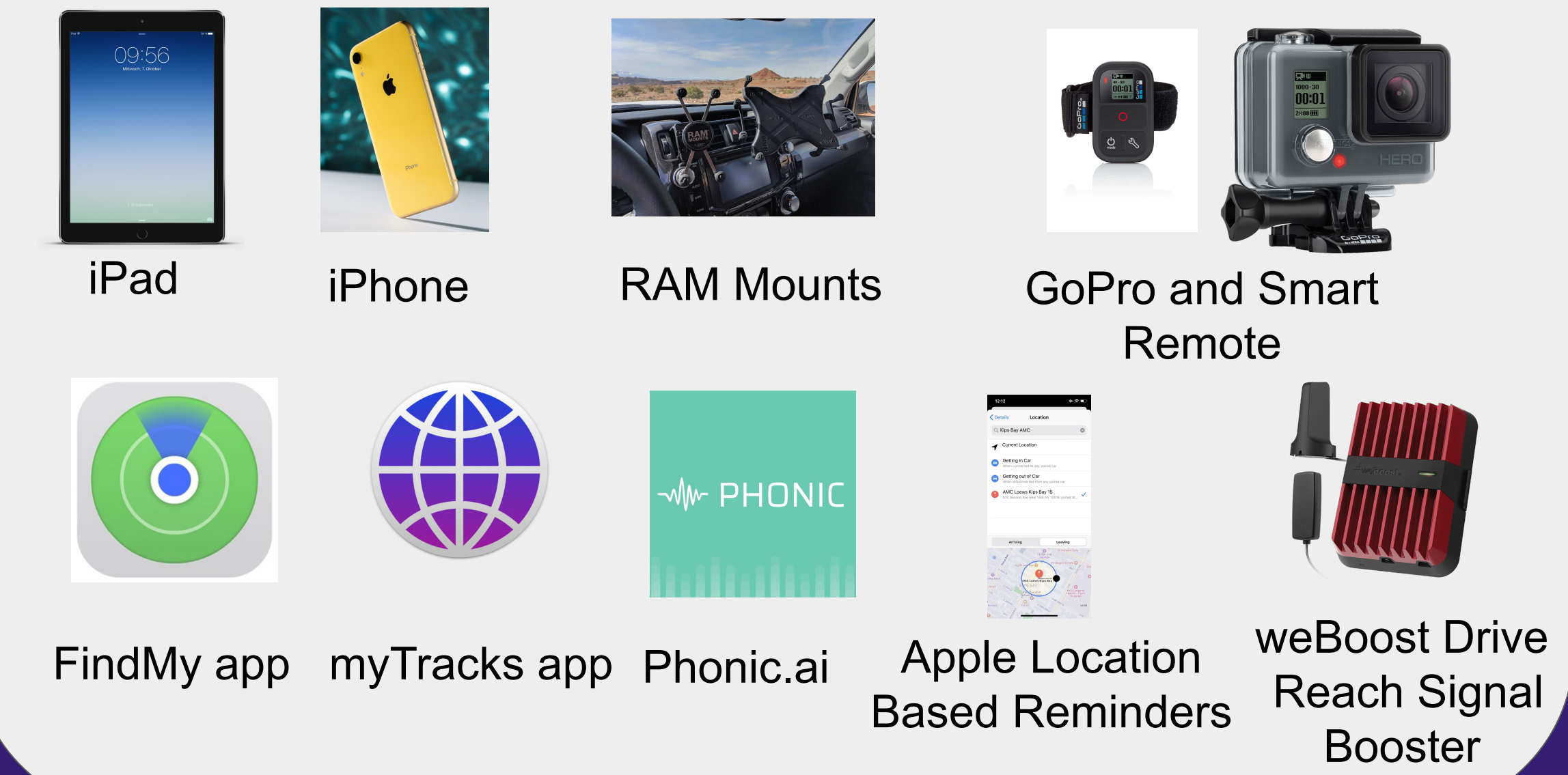


Shown above is the setup of the system inside the cab of the truck. The iPad is mounted to minimize driver's hand time off of the wheel while the iPhone is close to make sure the iPad hears the custom ringtone. GoPros can be mounted on the dash or windshield to record the road while the Phonic.ai system records the driver.

Block Diagram

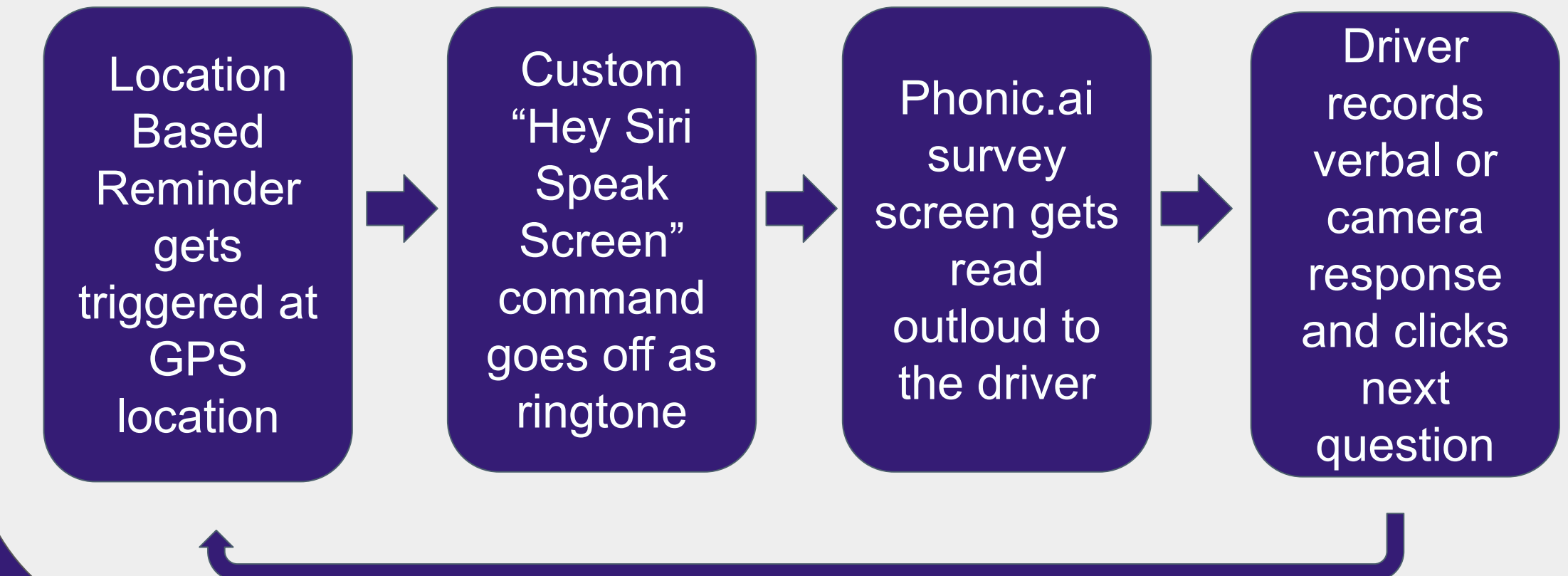


Components



How it Works

1. Create Phonic Survey
2. Set locations for survey questions to be answered
3. Add locations to Apple location based reminders
4. Start recording location on the myTracks app (map of driving route)
5. Start sharing location on the FindMy app (live tracking)



Assumptions/Risks

- WiFi/technological issues (takes too long to upload)
- System cohesion with GoPro (did not perform tests with GoPro)
- Cab material (not magnetic to attach antenna)

Future Steps

- Purchase necessary parts in system
- Train drivers how to use the remote testing system
- Explore data analysis and test efficiency
- Test eye-tracking movements of drivers while performing remote user testing to ensure that safe driving is achieved

Acknowledgements

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